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THE PRINCIPLE OF FIXATION IN FRACTURE TREATMENT.

BY EDWARD A. TRACY, MD., BOSTON.

In fracture, the bones should be put into the correct position and retained there, until reunited. This statement is easily made, but to bring about the fact in a certain (or rather uncertain) percentage of cases is decidedly difficult, and in some cases impossible. That is why in any given case of deformity resulting from a fracture, we must be extremely cautious in venturing an opinion as to whether the deformity could have been avoided by some other treatment than the one employed. We have now a means of diagnosis unknown a few years ago—the X-rays. By its use an accuracy can be reached in getting a knowledge of the position of the bony portions of the anatomy—an accuracy heretofore unattainable except by autopsy—for the surgeon did not dare, and to-day will not dare to cut down on broken bones simply to make a diagnosis. But to read correctly X-ray pictures, whether on the fluoroscopic screen or photographic plate, requires skill only had by experience, and to read aright a radiograph, a knowledge of the relative position of the parts shown, the

Crookes' tube and the plate is necessary. Otherwise the information gleaned is most fallacious, as the writer demonstrated in his paper on "The Fallacies of X-ray Pictures" published in the Journal of the American Medical Association, Nov. 6, 1897. In the diagnosis of fractures the information obtained by the older method of examination by the sight and touch is invaluable, and in the vast majority of cases is sufficient for diagnostic purposes. The surgeon cannot train his tactile sense too much, and should attain an efficiency when he will but seldom need the X-ray's aid. However, in these cases of doubtful diagnosis, relatively small in number, the X-rays are the searchlight of bone surgery, and are invaluable.

Having made a diagnosis, the question of reduction comes up for consideration. If manipulations fail should the operation of cutting down and wiring, pegging, clamping, suturing, ferruling, or dove-tailing the broken bones be done? It depends on the condition and circumstances of

each case and on the ability of the surgeon. No rule can be laid down for practice in this matter is most diverse. The subject is in its evolving stage and it will take years before general practice is uniform. Some of the younger surgeons advocate making an operation in all cases of simple fracture with irreducible malposition of the fragments, while experienced surgeons of vast experience caution us to be chary of such operating. The younger men tell us that sepsis is an avoidable quantity in such operation, while the older and more experienced warn us that sepsis must yet be dreaded. The cases upon which the question of operation largely centres are fractures associated with dislocation of the head of the humerus, fracture of the clavicle and oblique fractures of both leg bones.

As I have stated the question of operation in such cases is in its evolutionary state, and not till considerable work is done, with careful observation of the results, and the conscientious publishing of all the cases treated by observing can definite conclusions be arrived at.

There is one class of fractures, however, and that class embracing the vast majority of cases, upon which there should be uniformity of practice, and undoubtedly will be at no distant day. These cases are the class ordinarily designated simple fractures that are reducible; the newer term, closed fractures in contradistinction to open (compound) fractures, not being in general use yet. These simple fractures should be reduced, if not already reduced, when the surgeon arrives. A fixative apparatus should be applied, and this should be easily removable. The modern treatment of simple fractures demands early massage, as advocated by Champoniere. Massage relieves pain, keeps up the nutrition of the muscles, which is interfered with by the enforced rest of the limb, causes the absorption of the hemorrhage and exudates that accompany the fracture, and aids in the production of a healthy callus by its stimulating the growth of

bone and fibrous tissue cells. The writer has practiced massage as an essential part of fracture treatment for the past five years, and insists on its importance in a paper, "The Modern Treatment of Fractures," published in the *Journal of the American Medical Association*.

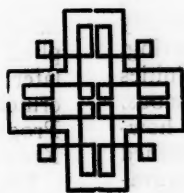
He is pleased to note that Scudder, of Boston, in a recent paper on fracture treatment before a local society has given the subject the importance that it deserves. As a corollary to the employment of massage it follows that the plaster of Paris bandage treatment must be discarded, for massage cannot be applied through a stone wall. The discardment of plaster of Paris in fracture treatment rests not alone because of its interference with early massage, but because of its imperfect fixation. Maulvy, of New York, for this reason mainly, advocated its discardment in fracture treatment, at the Atlanta Meeting of the American Medical Association.

In those cases requiring fixation he advises the use of wood-plastic splint material, because of its "porosity, strength, lightness and its plasticity for adjustment." He further states that it served an equally important place in compound or complicated as in simple fractures.

The causes for the lack of fixation in the plaster of Paris treatment are not mysterious or hard to comprehend. A limb wrapped up in cotton batting cannot be immobilized, no matter what the fixative appliance put on over it. Furthermore, a limb done up in plaster of Paris shrinks because of muscular atrophy, and the subsidence of swelling. This shrinking adds more to the misfit, and after a while the bones "wobble about in the plaster encasement," as graphically described by Manley. The wonder is that plaster of Paris is used at all in fracture treatment. But the method has become so general in hospital use that it will be some time before it finds its proper place—innocuous desuetude. Hospital service runs in a rut, and it can safely do so, because

the courts have decided that the patient has no recourse in law for damage done him by hospital treatment. Many of the deformed legs we see after fractures are due simply to the imperfect fixation of the plaster treatment. The muscles tug at the fragments and displacement, more or less, results because of their imperfect immobilization. The patient gets on his feet and the slight degree of deformity is increased, and for a result we see an impaired limb, the body weight not falling in its right lines. These patients have pain in their feet, in the region of the break, "rheumatism" lameness, in short, a permanent disability. The main leg-bone, the tibia, is subcutaneous throughout its entire length. We should be able with our fingers to recognize deformity, even in its incipency. We should correct the deformity and hold the parts in position by means of a fixative splint moulded directly over the shin bone next the skin. This will not allow any bowing of the bones. It holds them

while reunion takes place, and allows of inspection of the fracture at any time by the simple unwinding of the bandage, and in like manner with other fractures. The problem of easy and rapid fixation is largely solved by the use of a plastic material that can be moulded over the parts directly next the skin. That this is so has been demonstrated by the writer's paper on "A Safe and Quick Method a Bone and Joint Fixation," published in the Boston Medical and Surgical Journal, Aug. 31, 1899. Such a material is the wood plastic splinting, and its intelligent application and use is a distinct advance in fracture treatment. Manufactured splints, ready made, are as much an abomination to-day as they were in the days of F. H. Hamilton, the most eminent American authority on the subject of fractures. Made to fit every case, they fit none. No practitioner should use them. "The Surgeon," as Marcy says, "should make a splint to fit the limb, and not the limb to fit the splint."



NEW YORK ACADEMY OF MEDICINE.—SECTION ON ORTHOPÆDIC SURGERY.

(Meeting of October 20th, 1899.)

Dr. A. B. Judson read a paper on "The Pathology and Treatment of White Swelling of the Knee." He said that with the scientific progress of the day great changes were taking place in our knowledge of disease. Although pathology took the precedence



in medical studies she was a fickle divinity. We learned, but with the prospect of having to unlearn, and the all-wise, unwise public sensed this and, when in dire straits, went doubtfully away, "trembling, hoping, lingering, flying" to fanes where the divinities were not only fickle but meretricious. In white swelling of the knee, however, it was sufficiently established that use of the inflamed joint aggravated and prolonged the disease. Arrest of motion, and cessation of weight-bearing necessarily followed as a part of rational treatment. He described apparatus and presented the following patients.

Case I. A girl seen in September, 1899, age 6 1-2 years. Early diagnosis. No pain. Slight muscular atrophy and swelling of the knee. Flexion 20 degrees to 170 degrees. An asymmetrical gait had been noticed for about five weeks. When

told that a child was threatened with Pott's disease, Dr. Fayette Taylor said: "The house is on fire or it isn't on fire." In the present case the occurrence of signs which, though slight, were well defined, established the diagnosis of osteitis. An ischiatic crutch for the protection of the limb from the weight of the body was applied. If resolution did not follow in a few weeks a fixative brace would be added.

Case II. Boy. Nov., 1897. Age 4 years. Duration of disease 1 year. Flexion 20 degrees to 125 degrees. Ischiatic crutch was applied and 3 months later a fixative brace. Pott's disease appeared in the lumbar region and a spinal brace was applied March 1898. Abscess appeared but had been absorbed. Subluxation persists but the femur is super-imposed so far over the tibia that the stability of the limb need not be impaired. Knee is at 6 degrees. Prognosis good.

Case IV. Boy, Aug., 1895. 1 year, 9 months. Duration a few weeks. Knee at 90 degrees. Swelling and severe pain. A year later destruction of the bone was far advanced with sinuses on all sides of the knee. Subluxation. The fixative brace was applied, with relief of pain, and 6 months later the addition of the ischiatic crutch restored the child to activity. Prognosis good. Sinuses closing. Knee at 10 degrees.

Dr. W. R. Townsend said that thorough surgery would do a good deal for the patient. The knee was septic and, although children tolerated pus better than adults, some day a general sepsis would appear and the child would lose its life.

Dr. Judson said that long and frequent absences from the dispensary had marked the history and had delayed recovery. It was probable that other advice had been freely sought. If the general condition was good at the time it might have been said either

the mechanical treatment should proceed or that an operation would be well borne and would hasten recovery. If the condition had been bad, as it was at times in the extreme, an operation might have been urged to save life or postponed on the ground that the chance of recovery was too small. The patient had escaped the loss of bone by operation and the result would be recovery with greater straightness, length and stability of limb than could be hoped for after an operation.

Case V. Girl. Jan., 1889. Three years, 7 months. Duration, 6 months. Marked flexion. Fixative brace and ischiatic crutch applied. Flexion entirely reduced. Three abscesses appeared and in due time the resulting sinuses cicatrized. In October, 1894, motion was between hyperextension 5 degrees and flexion 30 degrees, and treatment was suspended. Four years later flexion was found to have returned with motion 28 degrees to 48 degrees. No symptoms. Fixative brace re-applied with reduction to 10 degrees with prospect of complete reduction. When the bones were mature their articular surfaces would have adapted themselves to each other without flexion so that the femur would rest securely on the tibia in the straight position.

Case VI. Girl. February, 1896. Ten years. Duration 3 years. Knee flexed at 35 degrees after excision. Fixative brace applied. Flexion had been reduced to 20 degrees but had relapsed to 3 degrees from a failure to inspire the patient and her friends with enough confidence in the usefulness of mechanical means, to lead to the necessary attention to the details of treatment.

Case VII. Girl. August, 1895. Three years of age. Flexion at 22 degrees after operation on the bone. Fixative brace applied. Flexion entirely reduced. Prognosis good.

Case VIII. Boy. January, 1893. Seven years, 6 months. Duration 18 months. Previous treatment by a splint protecting the limb from the

weight of the body and a plaster of Paris dressing. Fixative brace and ischiatic crutch applied. Patient was presented to the Orthopædic Section Ap. 20, 1894. Crutch removed Sept. 1896 and brace Jan. 1897. Flexion 8 degrees to 75 degrees with no defect in his ordinary gait.

Dr. Townsend said that synovitis was present with effusion and that he would continue to give support as absorption, which was desirable, would be doubtful if the boy was permitted to run about.

Dr. G. R. Elliott said that this case of chronic hydrops presented quite as high a degree of atrophy as those in which the bone was unquestionably involved.

Dr. Judson said that the presence of synovitis effusion had been early recognized but had not reversed the diagnosis of osteitis.

Dr. Elliott said that the other patients also presented a high degree of atrophy above and below the joint. The merest type was familiar with the sudden atrophy of developing tubercular joint disease, the cause of which was still far from being demonstrated. How could we differentiate atrophy due to disease from that due to bone disease? Atrophy in the great number of doubtful cases commended itself to us as a puzzling sign whose many expressions could not as yet be interpreted.

Case IX. Boy. March, 1891. Fourteen years. Duration since infancy. Swelling and limitation of motion. Flexation 25 degrees to 55 degrees. Two years after application of the fixative brace the knee was straight and 18 months later hyperextended 10 degrees. Treatment was suspended January 1896. Almost perfect ability in walking. Flexion 10 degrees to 20 degrees.

Case X. Boy. February, 1885. Eight years. Duration 4 years. Marked subluxation. Flexion 30 degrees to 80 degrees. Sinuses. Thomas's splint for protection and a fixative brace March 1885. Presented to the Section March 1886. An

ischiatric crutch in place of Thomas's splint January 1887. Knee hyperextended 2 degrees. Sinuses closed. Ischiatic crutch removed March 1890 and fixative brace was occasionally worn until July 1895. On presentation flexion was 25 degrees, a result due in large measure to failure to secure due attention to treatment at home.

Dr. Townsend said that although there was considerable deformity there was a useful limb. The absence of motion was an advantage as, with motion, he would not walk so well.

Dr. Judson said that gradual, painless and complete reduction of flexion should have been well within the power of a simple lever such as the fixative brace and the ability of the limb to uphold the body would have been thereby increased. He did not object to the presence of motion if the knee were capable of full extension. In the absence of motion, ability to walk well after recovery would be increased by raising the shoe of the unaffected side by adding to its sole and reducing the thickness of the sole on the affected side.

Dr. H. L. Taylor compared tuberculosis of the different joints. He thought that the chances of a good result were better in white swelling of the knee than in hip-joint or spine disease. The knee was more exposed to view and more easily examined, handled and controlled. In the stage of acute exacerbation from synovial inflammation, when extreme tenderness and suffering made it impossible to move the patient and when anodynes were powerless, a surprising degree of immediate comfort followed immobilizing the knee and at the same time applying counter extension.

Dr. R. A. Hibbs said that many patients do very well with no perineal support and showed a remarkable degree of ability on the part of a badly diseased knee to bear the weight of the body. He thought the prevention of lateral as well as antero-posterior mobility was the important elements of treatment which had not been pro-

vided for in the apparatus which had been exhibited.

Dr. Judson thought that he would be at a loss to know how to treat this affection, or osteitis in any of the large joints of the lower extremity, without perineal support on account of the enforced rest which it brought to the joint. The apparatus had been said fancifully, but with a good deal of truth, to put the limb to bed while the child ran about. He did not wish to give up the thought that these diseases were almost entirely absent from the upper extremity for the reason that the arms were exempt from carrying the corporal weight.

Dr. J. J. Walsh said that in one of the patients the pelvic band, where it rested against the body in front, appeared to make pressure which might prove to be injurious.

Dr. Judson said that if the perineal, or ischiatic, strap were too short the pelvic band would fall against the pubes and if the strap were too long the band would strike the anterior superior iliac spine, but if the strap were of the right length the pelvic band would be held by it at such a level that it would simply make harmless pressure on the abdominal wall. The pelvic band might serve its purpose even if it did not touch the skin at all as its only function was to furnish a support on which to hang the perineal strap which is, in effect, a crutch-head applied under the leg instead of under the arm.

Dr. Townsend said that the straps crossing the front of the limb might interfere with the circulation and even produce synovitis by pressure on the synovial sac or cause atrophy of the quadratus femoris muscle and tendon and thus interfere with the use of the limb after recovery.

Dr. Judson said that it was common enough in orthopædic work to compromise the welfare of the soft parts for the safety of the skeleton, but serious mischief was very rarely done in this way. The straps of the fixative brace were efficient and comfortable when used simply to arrest undue mo-

tion, as strong pressure was unnecessary for this purpose. When an old deformity had to be reduced, however, more pressure would be required and it was always easy to avoid doing harm with the assistance of the Yankee ingenuity which was believed always to reside in an orthopaedic consulting room, and by relying on slow and gentle methods. This affection was one of the worst that could attack the skeleton of a child and a result should be considered commendable if the limb were strong and straight and useful albeit motion might be limited or absent from the joint.

DIAGNOSIS OF WHITE SWELLING OF THE KNEE.

Dr. Elliott recalled the case of a young woman affected with traumatic synovitis of the knee. Pain, muscular atrophy, uniformity of joint swelling and spasm simulating reflex spasm had persisted for several months. Excision of the joint had been advised and treatment for tubercular joint had been given. The symptoms had, however, given way to complete recovery with normal limb and joint after massage, compression and mechanical support. Another woman, 20 years of age, had been treated, without relief, by fixation and extension, as for a tubercular knee joint. The tumor increased to an enormous size and became irregularly nodulated and the pain was excessive. It was an instance of round-celled sarcoma and the patient died 8 months after the onset.

Dr. Judson said that semi-fluctuation was an important sign in such cases, caused probably by the pressure of a number of deeply seated collections of fluid.

Dr. C. A. Elsberg said that syphilis and chronic gonorrhoeal rheumatism affecting the knee sometimes simulated tubercular disease and especial attention should be given to the differential diagnosis of tuberculosis and hæmarthrosis, of the knee. A joint slowly filling with blood resembles in many respects a tubercular joint. There were fluid collections, deposits

of fibrin, possibly erosions of cartilage, infiltrations of peri-articular tissues, a gradual and insidious invasion and a very chronic course. Two instances had come under his observation. In the case of a boy, two years of age, a tentative diagnosis of tuberculosis of the knee had been corrected 3 or 4 weeks later by a further examination induced by the occurrence of hæmarthrosis of three of the finger joints. It was found that in the history of the family the male children of a number of healthy mothers had been hæmophiliacs.

Dr. Hibbs recalled a case in which pain for 2 weeks and inability to walk had led to treatment by a plaster of Paris dressing for knee-joint disease in a boy 5 years of age. Four months later the patient was seen again and was found to have infantile paralysis, having been in the hyperæsthetic stage when first examined.

Dr. Taylor had seen infantile paralysis mistaken for acute rheumatism and for hip-disease.

Dr. Townsend had mistaken a sarcoma for an osteitis of the head of the tibia in a woman 21 years of age. The growth of the tumor was slow and the swelling not more than he had seen in osteitis. There had been no pain. After 18 months he had operated to remove the local condition. A blackish mass, mostly clotted blood, was revealed and the nature of the case was recognized. As much of the bone as possible was removed. A year later the wound had closed and recurrence having taken place amputation was done three years ago. An artificial limb was applied and the patient was well with no signs of a return.

Dr. Elliott said that the course of the disease had been remarkably slow. Twenty-seven cases of sarcoma of the lower end of the femur had been collected. Most of them ended fatally within two years, even after amputation. The myeloid type furnished the cases of longest duration, while the round, or spindle-celled variety led to rapid fatality.

OPERATIVE TREATMENT OF WHITE SWELLING OF THE KNEE.

Dr. Townsend said that mechanical treatment was, as a rule, so successful that operations were rarely necessary if the treatment was begun early. Ligaments and soft parts, when much diseased, should be removed by arthrectomy, free incisions being made, sometimes on both sides of the knee, with the simultaneous removal of diseased bone by the curette. The results of arthrectomy were very good and a movable knee should be expected. The excision of sinuses was probably the easiest way to get rid of them. The more complete operations of excision and amputation were rarely indicated. The former should rarely be done in children because it was likely to be followed by flexion of knock-knee and because the inevitable shortening would be excessive when the patient grew up. In a very bad case excision did not go far enough, in a mild case it was too radical. Amputation at the lower third of the thigh was a recourse in sepsis when the removal of all damaged tissue by arthrectomy or excision was impossible.

An abscess, as soon as detected, should be opened and cleaned out and, if possible, the diseased focus in the bone removed by the curette. Many patients would thus be saved from sepsis and a movable joint be secured, instead of a stiff one. Thorough aseptic precautions should be observed and communication of the abscess with the joint cavity should be avoided in operating and spontaneous communication prevented by operating early.

A septic joint should be freely evacuated and, as a thorough cleansing out was necessary, and as thorough drainage was often unsatisfactory, an incision should be made across the knee in front and washing out conducted after lifting up the

patella. Amputation might thus be avoided in cases of streptococcus inflammation. If this failed, resort might be had to amputation. In a boy, age 9 years, who was thus treated amputation soon reduced the pulse from 148 to 112, and the temperature from 104 degrees to 98.5 degrees and healing by the first intention and perfect recovery followed.

Dr. Elliott asked whether opening all abscesses should be the rule.

Dr. Townsend said that an abscess showing signs of infection or a tendency to burrow should be opened. Abscesses about the knee joint containing simply the products of tubercular inflammation might not demand immediate evacuation, but as the large majority of them burrowed or became infected, he was in favor of opening them all.

Dr. Elliott said that the presence of mixed infection should decide the question. The proper course lay between the two extremes of opening all and not opening any of the abscesses of chronic bone or joint disease.

Dr. Hibbs asked for the diagnostic signs or symptoms of mixed infection.

Dr. Elliott said that increase of tension, tenderness increasing with oedema, and frequently redness, in short the signs of so-called inflammation were certain indications of mixed infection.

Dr. Taylor said that there would be little need of operative surgery if these cases were seen early. Excision would be performed much less frequently in the future than it had been. Sometimes a good operation in the adult, it should be very seldom done in children.

Dr. Townsend would emphasize two points: 1st, the more thorough and careful our mechanical treatment the less frequently would we operate, and 2nd, if an operation was necessary it should be promptly and thoroughly performed.



THE PATHOLOGY OF LOBAR PNEUMONIA AS A BASIS
FOR TREATMENT.

DR. ANDREW H. SMITH, NEW YORK.

At the meeting of the New York Academy of Medicine, November 2, 1899, the author read a paper on this subject. In using the term "pneumonia" he said that he desired to restrict it to the form variously designated as lobar, fibrinous, or croupous, the form which, in typical cases, was ushered in abruptly by chill and fever, and which, after from four to nine days, if the patient was to recover, ended suddenly by crisis. Pneumonia, he said, was not an inflammation of the lung, although pneumonitis could be produced at will in any one of a great many ways. Inflammation, supuration, and even gangrene might be produced, but it would not be pneumonia. There was one thing which introduced into the parenchyma of the lung would always produce pneumonia, and that was the pneumococcus. These facts served to enable us to differentiate sharply between pulmonary inflammation and pneumonia. It was not enough to admit the infectious nature of the disease and define pneumonia as an inflammation excited by the presence of a specific parasite. The parasite was unquestionably there, but it did not excite an inflammation. In pneumonia the parenchyma of the lung did not suffer; at most there was a certain amount of desquamation of the epithelium. There was nothing left to represent the results of inflammation. The tremendously active process that had gone on in the lung had vanished, and had left no trace behind it. For this we had to thank the special nutrient circulation provided by nature. At the same time, and in the same area, one could see the action of the right heart completely suspended, and that

of the left heart going on actively. In the pneumonic lung, the capillaries which were the continuations of the pulmonary artery were completely thrombosed, and this thrombosis extended back to the heart. If the entire lung were involved the thrombosis would extend back into the bifurcation of the pulmonary artery. The blood supply from the bronchial arteries, on the other hand, was completely free from obstruction. In pneumonia we had to deal with a process of germ culture going on in a culture medium. The complicated manifestations completing the clinical picture of pneumonia were epiphenomena. Two of these epiphenomena were of extreme importance, constituting singly, or together, the chief menace of life, viz.: (1) Infection of the system by toxin formed in the lung, and (2) the embarrassment of the lungs from the exudation in the air cells. From the first arose a host of manifestations dependent upon toxæmia; from the second, we had the ever-present danger of failure of the right heart.

Treatment.—Heretofore the treatment of pneumonia had been far from satisfactory, pneumonia destroying more lives than any two other acute diseases put together. Within the past decade, however, there had seemed to be the dawning of a better era. The problem before us was first of all to arrest or inhibit the growth of the pneumococcus, bearing in mind the peculiarities of the organ in which the disease process took place. It should be remembered that the life of the organism was short, not exceeding ten or twelve days in artificial cultures. Another interesting fact was, that this

was one of the most sensitive of all germs, its growth being arrested by very slight changes in its surroundings. If we could impregnate the blood sufficiently with a substance inimical to the growth of the pneumococcus, there would be a chance of forestalling the local process. The local process was always a spreading one, so that it seemed perfectly feasible to prevent the spread of it to other cells than those first invaded. Long before the microbic theory of pneumonia had been understood, or even thought of, calomel had been a favorite remedy, although given with the idea that it was an antiplastic. The older practitioners rarely had the hardihood to treat a case of pneumonia without a mercurial. In 1878 Dr. Mary Putnam Jacobi had reported the result of an investigation into the action of the so-called "sedative dose" of calomel in pneumonia. The results from this treatment, which had been a favorite one with the late Dr. Leaming, had been quite remarkable. Quinin, though a feeble antagonist to other than malarial germs, was known to have a decidedly beneficial action in pneumonia when given in large doses. This was not surprising when one considered how thoroughly this remedy pervaded the whole system. Dr. J. S. Thacher, at his suggestion, had made a number of experiments in the laboratory of the Presbyterian Hospital, regarding the effect of chloroform on the pneumococcus; and these had abundantly substantiated what had long been known from clinical observation concerning its powerful influence in pneumonia. Creosote had been highly lauded by a number of observers as a useful remedy in pneumonia. It had been given by the mouth and in enemas. The Carbonate of Creosote had been found to saturate the blood readily without irritating the stomach, and without giving rise to poisonous or other untoward effects. A very remarkable series of seventy-two cases of pneumonia occurring in Austria among miners had been reported. All of

these had been treated with large doses of sodium salicylate—gr. cxx. daily. All of these patients had recovered, and in not one had the disease terminated by crisis.

A Possible Prophylactic Treatment.—The treatment should be instituted, in all cases of pneumonia, at the earliest possible moment. The occurrence that a considerable amount of toxin had been already formed in the lung and had been taken into the general circulation. As the disease progressed, one after the other of the air cells would shut off, and in each one of these the germ culture must be allowed to go on. The young, newly of the chill was a certain indication as had been proved by laboratory cultures, and it was in the half-filled cells in which the blood was still flowing that these cocci were present in large numbers, and hence it was never too late to begin treatment. Dr. Smith said that, in his opinion, the family physician should instruct his patients formed cocci were the most virulent, to keep in stock some preparation of creosote or a salicylate, and to begin its use immediately upon the first sign of chill or pain in the chest. By this means he believed pneumonias might, in many instances, be prevented from developing. His experience with this comparatively new treatment had been rather limited, but so far it had been encouraging. At one time he had thought well of the salicylates, but was now inclined to believe that in the later stages they were depressing, and certainly they were always irritating to the stomach. He now preferred Creosote Carbonate, also known as Creosotal.

Accessory Treatment.—The accessory treatment embraces: (1) Stimulation of the emunctories to carry off the poison; (2) sustaining the heart by the use of cardiac stimulants; (3) the use of vasodilators or of venesection; (4) compensation for the loss of respiratory surface by inhalations of oxygen; (5) reduction of the temperature, as by the application of cold to the surface; and (6) relief of the incidental symp-

toms. When the chief danger to life was mechanical, from obstruction to the circulation, as shown by the labored respiration and the presence of cyanosis, he would give nitroglycerin, and not digitalis. If the patient's face could be kept florid, there might be hope, but blue lips were the shadow of death. He infinitely preferred the big pulse, however soft or gaseous, to a tiny thread which the finger could scarcely discover. Under these conditions he had never known the pulse to become full and slower from the administration of digitalis. Regarding the so-called digitalis treatment the speaker said that the infusion of digitalis used by Putresco did not represent the drug, containing chiefly digitalin and digitonin, and he would hazard the opinion that the good effects obtained from such administrations had been rather from the action on the heart than on the pneumococci.

The President, Dr. William H. Thomson, said that he had been occasionally called in to see cases in which there had just been a violent chill, followed by bloody sputum, and had succeeded by the administration of about m xxx, of chloroform in preventing the development of other symptoms. At one time he had treated ten pneumonias in alcoholic subjects, and every one of them had recovered, but having subsequently had one or two patients die very suddenly after the reduction of the temperature, he had abandoned this treatment. He was inclined to think that such medicinal germicides were dangerous. The fact that the pneumococcus could both lose virulence and gain virulence explained many recoveries and relapses. This fact also gave some hope that, from its sensitiveness in the laboratory to certain substances—notably chloroform and carbolic acid—better therapeutic results might be attained along the lines laid down in the paper by Dr. Smith. In one exceedingly unfavorable case of double pneumonia he had given twenty grains of Carbonate of

Creosote, in emulsion, every two hours, and no other medication whatever. The man had recovered, but the disease had not terminated by crisis. A second case was that of a colored man who had been brought in with high fever and great prostration. As the crisis occurred in this case within seven hours after admission to the hospital it was impossible to say whether or not the medication had had any share in the result. He had given Carbonate of Creosote in very large doses to small children with bronchopneumonia, and had never observed the depressing effect on the heart which creosote itself possesses.

Dr. Smith, in closing the discussion, said that he had gone over the history of pneumonia for many years, and had not found a single instance in which any one in discussing this disease had adverted to the double circulation in the lung, and yet it seemed to him the most important of all the facts connected with this subject. As this circulation was unique, it did not seem possible to reason from similar disease processes in other parts of the body. It was true that pneumococcus inflammations were present in other parts of the body, but these disease processes did not have anything in their clinical course analogous to pneumonia. Pneumonia was pneumonia because it was in the lung, and the peculiar structure of the lung was absolutely necessary for the existence of pneumonia. The tremendous extent of the process was also worthy of note. Did any one think that with an inflammatory mass in the liver of the size of a consolidation in the lung, recovery would take place? Obviously not. When gangrene of the lung occurred it was because a nutrient twig had been involved. It should be remembered that the blood coming to the lung brought with it a variable amount of sodium bicarbonate. The carbonic dioxide of this combination was destined to be thrown out, but in a solid form. Nature has provided for the production of a peculiar acid,

made just where it was wanted. This substance was pneumatic acid, which formed with the sodium a pneumatide of sodium, setting free the carbon dioxide. In pneumonia the production of pneumatic acid went on, as could be easily demonstrated. Now, if there were any one thing which the pneu-

mococcus could not tolerate, it was an acid, and in this fact was to be found one of the causes of the crisis. If pneumonia was a simple inflammation, how could the phenomena of the crisis be explained?

—Med. Record, N. Y., Nov. 18, 1899.

TUBERCULOSIS.

BY PROF. G. CORNET, OF BERLIN; VIENNA, 1899, ALFRED HOLDER.

In the chapter on "Specific Treatment" Professor Cornet discusses the chief specific remedies that have been employed. The most favorable influence of all of them upon the body is exercised by creosote, especially when in combination with carbonic acid in the forms of the preparations known as "Creosotal" and "Duotal."

"It is especially in the cases of patients with very abundant expectoration swarming with bacilli that diminution of the secretion takes place after the administration of creosote; the rapidity of the advance of the disease process diminishes, and sometimes ceases entirely. This may be chiefly due to the improvement in digestion (Klemperer), in the appetite, and in the general nutrition that is sometimes observed after its use. Not infrequently, however, there occur cases in which creosote has exactly the contrary effect, and causes anorexia, eructations, digestive disturbance, and diarrhoea, so that its employment must be quickly stopped."

The disagreeable and even caustic action of creosote, and the inconstancy of its chemical composition, have led to the recommendation of its chief constituent, guaiacol, and more espe-

cially of combinations of guaiacol with various acids, as substitutes.

"Of late years pure creosote and guaiacol have been largely displaced by the carbonic acid combinations of these drugs, Creosote Carbonate (Creosotal) and Guaiacol Carbonate (Duotal). The first is a thick fluid of a slightly bitter taste (decomposing in the intestine into its constituents creosote and carbonic acid), and the latter a white, tasteless, and odorless powder. Both remedies are similar in action, and both have the great advantages over creosote and guaiacol that they are much better borne by the stomach, cause neither nausea nor irritative symptoms, often increase the appetite and the bodily strength, lessen the expectoration, and cause a general improvement in the patient's condition. Jacob and Nordt have recently reported cases with very good results from Professor von Leyden's clinic, and my own experience leads me to coincide with their favorable judgment upon these two preparations.

Creosotal is to be administered to patients three times daily in milk, claret, beef tea, or capsules a quarter of an hour after eating. The beginning dose

is five drops, to be increased by two to five drops, until about thirty drops are taken at a dose; and the administration is to be continued for from six to eight weeks. Then the remedy should be discontinued for about a week; after which its administration may be begun again. The very large doses of from two to three teaspoonfuls which Chaumier has recommended frequently render the drug distasteful to the patient, and cause digestive disturbance. Duotal is often even better borne than Creosotal, and is to be given in doses of from 0.2 to 0.5 gram (3 to 7 1-2 grains) three times daily, gradually increasing up to a daily dose of from 1 to 2 grams (15 to 20 grains). It may be administered in

capsules or wafers, or may be taken plain with the help of a mouthful of water. For children the beginning dose is 0.1 gram (1 1-2 grains) increasing to 0.5 gram (7 1-2 grains) thrice daily."

Cornet further recommends Creosotal and Duotal in daily doses of 0.5 gram (7 1-2 grains) for the diminution of the expectoration.

The large doses of Creosotal prescribed by Chaumier are very suitable for acute diseases of the air passages, especially in pneumonia and bronchitis (Cassoute, Gorgier).

—From "Special Pathology and Therapeutics," edited by Prof. Hermann Nothnagel, Privy Councillor; Vol. xiv., Part 111.





Editorial

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A. D. 1900.

One must say this year by way of greeting, a happy new century, and this is the "Medical Times and Register's" greeting to its readers. We could hardly wish you "many more," but we can wish you many fractions of a century. When one stops to consider what a century of progress in medicine has performed for mankind, one is appalled to even contemplate what a new century may bring forth. We have no right to speculate on such a subject. It is possible we are at the limit of attainment, and that the next one hundred years will be retrogressive, and yet we are not pessimists. It would not be surprising that medicine, like other professions or trades, should have a fall after so rapid a rise as has been witnessed in the past decade. There are not a few things that might be mentioned to substantiate this view. The medical profession is not held in the esteem it was ten, twenty or even fifty years ago. Charlatanism is becoming more and more prevalent in spite of State laws, codes and ethics. What is worse is that it is practiced even among professional men, who have sworn to abide by the code of ethics. Probably never was there a time when certain medical schools

have been more strict and advanced than the present. Yet how many small colleges rush through matriculates to the degree of M. D. without proper qualifications. Never have there been more doctors to the square foot of earth who at present strive for existence in our cities than now. Even country towns have their plethora of more or less educated physicians. Hence we say there must come a reaction sooner or later, with a more or less deleterious influence on the profession at large. There are great problems to meet amongst medical men during the early part of the twentieth century, and who shall say what the result will be? We are in an age when every individual strives for more or less fame. If it cannot be attained by legitimate labor, earnest endeavor and painstaking enterprise, it will be sought after by advertising charlatanism or cut-throat professionalism. Shall we then wonder that the medical profession is in danger of retrograding?

On the other hand we have much to be thankful for at the beginning of a new century. Many branches of medicine have advanced to a scientific attainment which will not yield easily to

retrogressive changes. Notable among these is surgery. The value of asepsis will not be lost in the years to come. Methods of operating may change but we practically know what organs and tissues may be safely enucleated and what will not bear mutilation. In medicine the chance of degeneration in methods of treatment are more noticeable. In all probability the germ theories of the present will be greatly modified, and, while the

true elixir of life may never be found, yet we may live to see preventive medicine in full control of the situation.

We shall all continue our former policies in the *Times* and *Register* of presenting to our readers the best we can obtain in way of medical literature and in order to do this solicit from our patrons whatever may be useful to the professional interests at stake.

ABDOMINAL HYSTERECTOMY

Le Nord Medical, Nov. 15th, 1899, contains an important contribution from M. Picard on abdominal hysterectomy which had been freely discussed at the annual surgical congress.

The author regards the abdominal route as preferable in the greater number of hysterectomies. One of its dominant features is that it leaves no pedicle to give trouble by bleeding ulceration or mortification. Perfection of technique, operative education and moderate experience render its performance from day to day more frequent.

There are things which give this procedure special advantages above all others. These are, first, the Trendelenburg position; second, the large retraction, and third, the traction on the uterus.

Wide opening of the wound in the Trendelenburg position leaves the pelvic organs clearly exposed to the eye. The intestines pressed well up and securely covered with pads leaves the pelvic contents independent and isolated. The degree of safe displacement or tension of the uterus upward by traction is of infinite value in abdominal surgery. Reverdi's pulleys first directed our attention to this feature of displacement in fibroid enucleation.

In fact, abdominal hysterectomy has become a simple procedure and those operations of a difficult character, calling for exceptional skill with special instruments are destined to disappear,

not only because they are unnecessary but because they swell the mortality.

It does not appear that the advocates of vaginal hysterectomy have proven their case, on the contrary, many of our most skilled operators are still the champions of the abdominal route. Longest in 1050 hysterectomies (abdominal) had a mortality of 4.50 per cent. The percentage of vaginal hysterectomies ending fatally yet remains at 5 per cent.

Vaginal hysterectomies must, however, remain for selected cases. M. Gross divides hysterectomies into many categories. Thus for simple extra-ligamentary the mortality was 4.25 per cent. For the extra complicated 25 per cent. For the intra-ligamentary 42.85 per cent. With an obese woman having arterio-sclerosis, with frequent large losses of blood, suffering from a fibroid, no one would think of an abdominal operation; especially if she has borne children, and have a large spacious vagina.

M. Ricard cites another example for the vaginal incision. Patient 35 years, had had two children. For several months had a large amount of hemorrhage with pain in the pelvis and general nervous disturbances, and though she had lost 35 pounds was still fat. She had sugar in the urine, was anæmic and addicted to morphine to relieve pain. The uterus enlarged above the pubis. He made a vaginal incision and removed both ovaries with uterus, in each of which was a

large cyst. Another patient, 50 years, with tumor of the volume of a foetal head. She was in a state of great anæmia and emaciation and was reduced to little more than a breathing cadaver. She was a virgin with a narrow straight vagina, yet enucleation was not difficult, and recovery was prompt. Doyen advises the vaginal passage for hysterectomy in the obese. Ricard is in full accord but would include those who are in a reduced state of health and vigor. For moderate sized tumors not adherent the vaginal is to be preferred to the upper route. Ricard had 27 vaginal operations with only one death and this not imputable to the operation. He tells us that his vaginal hysterectomies were performed by a "debutant," a beginner, under difficult circumstances and yet with practically no mortality. In technique of operation he prefers Doyen's method; i.e. he

begins by the retrograde method, strips the cervix, ligates the uterine arteries and turns the uterus out.

The American method is not without its advantages. It consists in commencing the dissection on one side, making a broad serous flap and securing the vessels. The operation is completed by a subserous dissection.

The method of dissection in its essential details are not unlike that of amputating a breast, the ligation of vessels being among the last steps of the operation.

Note.—Frequent, rapid and safe uterine excision is a modern operation, now performed by any surgeon in selected cases with a low mortality. Its underlying principles are few and simple, viz., rapidity in manipulation, economy of blood, effective hemostasis, rigid asepsis, complete plastic patching, and, finally, proper after-treatment.
T. H. M.

RESECTION OF THE CAECUM.

Houilly, (Congres Francais Chirurgie; Revue de Chirurgie Dec. '99), records two highly interesting cases of abdominal surgery.

First: A patient, a young woman, had frequent violent spells of colic, suggesting appendicitis. The organ was removed, thickened and obstructed. Patient well for a year when pains began again. An abscess broke and a fistula followed, and about all the fæces came through this new portal. He performed two enterorrhaphies without result. Finally opened down and cleaned out entire caecum, which was found strictured, then free end of divided ileum was invaginated through a slit in the wall of the colon. Union was prompt and cure complete.

Histological examination of caecum showed only fibrous changes.

Second: A young, tuberculous young man who presented the abdominal symptoms of intestinal implication, diarrhea, fever, etc.

Symptoms of appendicitis led to a

removal of that organ. It was tuberculous. Later, evidence of invasion of the caecum became evident. The entire caecum and most of the ascending colon was removed, the parts being united by the button of Murphy. Result excellent.

Vantrion has called attention to serious conditions of inflammatory stricture of the caecum. Pathologically they are tuberculous, divers neoplasms or the ulcerations of typhoid or dysentery, appendicitis, peperiappendicitis or perityphlitis, and, let us add, syphilitis.

Vantrier had one interesting case, thought to be malignant in a man of 42 years, who had suffered from symptoms of caecal stricture for five years. There was a distinct tumor. Under specific treatment all disappeared, but, two years later, returned, when a successful but extensive resection was made and twelve centimetres of gut removed. Vantrier summarizes as follows:

1st. There exists commonly syphilitic ulcerations of the caecum similar to those found in the rectum.

2nd. That the ileo-caecal valve is uniquely the primary seat of these ulcerations.

3rd. That resection is the ideal treatment, for in eight cases he has had only one death.

Tedenot, of Montpellier, has had some valued experience with ileo-caecal tuberculosis and regards it as rapidly curable when not generalized. He was called to a man of 40, dyspeptic and constipated. He had had eight spells supposed to be appendicitis. Each time the pain was great and the belly ballooned but there was no fever. He found a large "plastron" filling the iliac fossa. He opened the abdomen to find the appendix and caecum healthy, but the last 20 centimeters of ileum involved by deep ulceration. This was cut away and the ileum invaginated into the caecum. The cure was rapid and the patient remained well after five years.

Tedenot operated on a woman with a mammoth caecum affected by sclero-hypertrophic tuberculosis. The ileum being surgically telescoped into the wall of the colon, cure was rapid and complete.

A veteran of '68, a drinker and a large eater had two sharp attacks of appendicitis. A sternal abscess formed at McBurney's point. Nearly all the faeces poured out here for a month. The skin had taken on a pachydermatus appearance from irritation and epithelioma was feared. A patch of the abdominal wall 8 cent. by 4 was resected. The caecum had two perforations and was so friable it would bear little handling. The caecum was entirely resected and the cure rapid. M. Tedenot has had 8 resections of the caecum with a mortality of 35 per cent.

Note.—A common mistake is made by setting down everything as due to appendicitis, especially when pain begins over the right iliac fossa. For example, I was called to a man with

all the symptoms of localized appendicitis. I entered from behind and cut down on an enormous mass of pus, faeces and ichor, with a large perforation through the caecal wall; washed out and drained. Three months later, a large fistulous opening remaining the caecum was liberated and an enterorrhaphy done. All closed in rapidly.

Second case: A man, seized just before dinner on the 14th of last July with colicky pain. A physician was called and diagnosed "appendicitis" and gave a large clyster of sweet oil and soap suds. I saw him at Harlem Hospital at 10 p. m. He was given another clyster at the hospital. None of them came from the rectum.

In great shock I made a diagnosis of sigmoid impaction. Opened over left iliac fossa and came down on a large gangrenous perforation of the sigmoid flexure close to where the rectum begins. Peritoneal cavity full of faeces, sweet oil and soap suds. Before the peritoneal cavity could be cleaned the patient had succumbed.

Third case: On the 10th of November was called to supervise an operation for what the attending physician had supposed was appendicitis. The local and general signs rather suggested it, but, as the patient, a woman, was nearly 70 a critical examination revealed nodules in the iliac fossa. It was my opinion that there was perforation of the caecum from cancerous ulceration. The abdomen was highly tympanitic and liver dullness absent. Patient in great collapse. On incision there escaped an audible gust of foul gas when the abdominal walls fell in. The caecum came readily into view when a gangrenous perforation was found large enough to admit the tip of a finger. This was closed by the plaid stitch. Four hours later the patient succumbed.

In the above cases the only hope for life lies in an early operation before exhaustion has advanced, for in deep collapse it is entirely useless.

T. H. M.

THE LATE DR. FRANCIS C. PLUNKETT, OF LOWELL, MASS.

On the morning of December 7th, after a sudden apoplectic seizure, Dr. Francis C. Plunkett, of Lowell, was called away.

As the career of Dr. Plunkett was an extraordinary one, and the man, a person of a strikingly, remarkable individuality, something more than a

listed, and was attached to a hospital corps, where he served six months, when he was transferred to the line and assigned as surgeon to the 183d Ohio Volunteers.

This regiment constituted a part of the celebrated Fifth Army Corps, under the command of the dashing Gen-



passing notice should be given of the life of this noted practitioner.

He was born in Ireland in 1843, coming from the gentry stock of Mayo; he received an academic education, was early apprenticed to his brother-in-law, Dr. Andrew Dillon, and from early boyhood was initiated into dispensary practice.

At the age of 19 he went to Dublin to prosecute his medical studies, and there remained until 1863, when he graduated and came to America.

Immediately on his arrival he en-

eral, Phil Sheridan.

Young Plunkett was on the bloody field of Malvern Hill and Winchester, and through the fierce campaign in the Valley of the Shenandoah.

His experience in the field of carnage and in the vast fever hospitals was very large.

He remained in the army for some time after the fall of Richmond. In the summer of '66 he resigned and came to Lowell. Here Dr. Plunkett's career was like the flash of a meteor. The personal magnetism of the man,

his extraordinary skill, his superb training and large experience in both civil and military practice, gave him an enormous advantage, so that before he was one year in practice he had far out-distanced all opposition and became the best known practitioner in the State.

His capacity for work was something remarkable and success smiled on him at every turn. Within ten years he amassed an independent fortune, and he only relinquished the incessant rush when his vigorous frame began to show signs of overstrain.

As a diagnostician he was quick, penetrating and decisive. Almost innately he seemed to have the art of gathering, analyzing and weighing the significance of symptoms; with every phase and shadow of disease he was a master, and what added to his unparalleled success was his mastery of pharmacy and therapeutics. For him it was nothing unusual to prescribe for, in private practice, from fifty to sixty patients daily, besides attending a widely scattered obstetric practice.

From his large experience in the Civil War and his superb training in anatomy, in Dublin, he was specially qualified in surgery. For several years he stood well to the front among the leading operators of New England. Though conservative and cautious in his selection of cases, when his mind was decided he operated at the operating-table with a firm hand; deft, precise and quick in all his movements. It was the privilege of the writer, as one of his students, to assist him in a large number of operations, for every conceivable condition, and though it

has been my privilege to witness operative procedure at the hands of the greater number of eminent surgeons in America and abroad, none seemed to have, to possess in a larger degree, the inborn attributes of the consummate surgeon, warm, keen sagacity, the undaunted confidence, the exquisite skill and mastery of the art; and what was more, his deep sympathy for the unfortunate afflicted.

In professional, domestic and public affairs the lamented deceased played a noted role. He was for years active in the State and county medical societies; for three years President of the Middlesex-North Medical, visiting surgeon to St. John's Hospital, for several years, and at the time of his death the President of its Medical Board and on the consulting staff of the Lowell City Hospital. He was a Commissioner of the City Library Building; had been on the Board of Aldermen.

In social and domestic life he shone at the best advantage. All his life, true to his inherited instincts, he was a thorough sportsman, a fine horseman; he kept his kennel of dogs and spent most of his leisure on the heath and in the woods with his gun. No one was more widely nor better known among all classes as a warm friend, but an uncompromising foe of what he believed to be unjust.

Dr. Plunkett was married twice; his second wife, a talented lady and a member of a well known Halifax family, survives him with three children, one of whom, a son, Mr. Harold Plunkett, is now a medical student at Harvard.



CLINICAL SURGERY AND SURGICAL PATHOLOGY.

In Charge of T. H. MANLEY, M. D., New York.

OPERATIVE TREATMENT FOR CANCER OF THE STOMACH.

Prof. Maydl has published the results of twenty-five operations which he has performed for cancer of the stomach. Since the days of Prof. Billroth these operations have been subjected to severe criticism, condemnation and praise alternating. Prof. Maydl divides the twenty-five cases into three classes for the sake of comparison. The first comprises cases in which the patient died from the effects of the operation either directly or indirectly. These were four in number. The second group includes those dismissed from hospital as cured, but in which within a short period thereafter a recurrence of the disease took place, and death ensued. These were seven in number. The third group, which is the most important, comprising fourteen cases, included those cases in which the patients still live. This section he divides into two sub-sections, (a) living upwards of two years since operation; (b) those alive less than two years after the operation.

Of the first group four died, one from a sudden attack of gangrene in the right lower extremity, probably embolic from the tying of a vein, but this could not be confirmed, being a private patient and the friends declining to consent to a postmortem operation. The other three died in two, three and five days respectively after the operation from peritoneal symptoms, collapse with anemia and exhaustion.

The second class left the hospital in good health, apparently cured, but ere long took ill with a recurrence somewhere else and died. One of the seven may be looked upon as doubtful. This patient lived fourteen months after the operation and died of pleurisy with effusion, every other organ being found healthy at the postmortem.

Even the appetite was unimpaired up to the very end, and no disease could be discovered in or near the stomach.

The other six cases lived 12 months, 8 months, 2 months, 20 months, 14 months, and 12 months respectively after the operation, or an average of 11.3 months.

Of the third class fourteen are still alive. These were operated on: August 27, 1893; January 27, 1895; March 1, 1896; March 20, 1896; February 20, 1897; March 27, 1897; January 30, 1898; October 29, 1898; October 31, 1898; November 3, 1898; December 21, 1898; January 4, 1899; March 25, 1899.

If these be further subdivided into two groups of over two years and under, we get the patient who may be considered cured in the surgical sense of the term. Seven may be classed thus: 8 years, 8 1-2 months; 5 years, 11 months; 4 years, 3 1-2 months; 3 years, 2 months; 3 years, 1 1-2 months; 2 years, 2 1-2 months; 2 years, 1 1-2 months.

In considering the percentages of the different authors, the above figures give 16 per cent. as the proportion of those who die from the operation; in 28 per cent. the disease recurs; while 56 per cent. still live. It may still be remembered that C. Ewald, of Berlin, condemned this operation on account of the mortality, he having had 73.3 per cent., which was certainly not encouraging; but these results far exceeded those obtained by the pioneer of the operation, Billroth, who had a mortality of only 45 per cent. Billroth's pupil, Mikulicz, reduced this mortality to 32 per cent., while other operators, Kronlein, for example, had only 25 per cent., Carl and Fantino, 21.5 per cent., and now Maydl's mortality stands at 16 per cent.

—Vienna Cor. Med. Press and Circular.

PUBLISHER'S MISCELLANY.

FATAL CHRONIC CONSTIPATION FROM ENORMOUS DILATATION OF THE SIGMOID FLEXURE.

BY PEVERELL S. HICHENS, M.A.,
M.B., B.Ch.,

The patient was a young man, aged 20. From the day of his birth to the day of his death he suffered from constipation, and his bowels were apparently never opened without recourse to artificial means. For the first week of life he was exceedingly ill, passed nothing but blood and water, and was not expected to live. He then began passing fæcal matter, but the motions were never those proper to an infant, consisting almost entirely of scybalæ, and they were passed with much pain and screaming. They were only obtained by 1-2 oz. doses of castor oil, which often had to be repeated two or three times in twelve hours. As the child grew the bowels were only opened by drugs, and with increased difficulty, and at the age of twelve months 1-2 pint enemas of soap and water were used. Later enemas of a whole pint had to be given, and very often had to be repeated two or three times. Later the bowels used only to be opened at intervals of ten days or a fortnight, and only after repeated enemas. A very large scybalous motion was then passed which was generally succeeded by several loose motions in the next two or three days. The motions could only be passed by the help of gravity—i.e., squatting down over a chamber in the position which, as Dr. Lauder Brunton has pointed out, is the natural and proper one for defecation. The patient very often felt slightly sick before the bowels were opened, and was very much collapsed afterwards, so much so that he often had to go to bed for the rest of the day. His abdomen was always greatly distended,

so that he could never button the bottom button of his waistcoat, or the top button of his trousers. About a month before he died he was taken ill with influenza. Five days before death he was seized with pains all over his body and slight swelling of the legs. He was treated for rheumatic fever. The night before he died he passed a fairly large motion. On the following morning he was seized with a severe pain over the heart, shortly afterwards he went to bed feeling fairly comfortable. During the night he suddenly got out of bed and fell down dead.

The body was brought to the hospital, and a necropsy was made. There was very slight cedema over the feet and shins, but enormous general distension of the abdomen. The abdominal cavity was occupied by a tense shining viscus, presenting the appearance of a sac rising out of the pelvis and passing under the ribs, where it doubled on itself and returned to the pelvis again—the enormously distended sigmoid flexure. At the point where the sigmoid flexure left the descending colon it turned on itself and passed directly up the left side of the abdomen. The summit of the viscus then passed behind the ribs and xiphosternum with a gentle curvature and descended along the right side of the abdomen to the pelvis to join the rectum. Some little distance above the junction with the rectum the viscus showed a distinct constriction. The remaining abdominal viscera were entirely concealed by the sigmoid flexure, which pushed the liver upwards and backwards, compressed the lungs, and rotated the heart upwards and outwards. It contained an enormous amount of gas, and a large quantity of semi-liquid fæces. The total length of the sigmoid flexure when it was opened and laid flat was 22 1-2 inches. Fourteen inches from its upper end

was a large cicatrix formed by an almost healed ulcer, probably stercoral in origin, which had caused the constriction above mentioned. The circumference of the flexure above the ulcer was 14 inches, at the ulcer it was 7 3-4 inches, and below 10 inches. These measurements, of course, represent the circumference of the flexure at its period of least distension, and they also show that the constriction at the site of the ulcer was merely a relative one and could have made no difference, or very little, to the onward passage of the fæces. The walls of the sigmoid flexure were uniformly greatly thickened. This thickening was shown on microscopical examination to be almost entirely due to great hypertrophy of the circular and longitudinal muscular fibres. There was also slight thickening of the submucosa. The small intestine showed no lesion, and was not at all distended. There was slight general distension of the cæcum and of the ascending, transverse, and the descending colon. There was no sign of a fibrous band, kink, or constriction anywhere except at the ulcer above mentioned. The lungs were small and compressed by the abdominal distension, and were slightly cedematous and engorged. The heart was somewhat displaced, but was otherwise perfectly sound, as also were the liver and spleen.

HERNIAL EVENTRATIONS.

BY THOMAS H. MANLEY, M. D., NEW YORK.

In recent years, since celiotomies and vaginal incisions have so greatly multiplied, the number of post-operative herniæ has been considerably augmented. No doubt, however, that of late, since needless or excessive drainage for non-septic conditions has been discarded within the abdomen, and more attention has been given to the separate and homologous approximation of the divided structures, one type of this unfortunate sequela is less frequent for the proportionate number of operations than formerly.

It is nevertheless common enough to constitute one of the most formidable objections to abdominal section.

There are no published statistics which will enable me to state whether these post-operative abdominal eventrations are more liable to occur in the female than the male sex.

My experience has been that they more frequently succeed in lateral than median sections through the peritoneum, and those below the umbilicus than above it. In my own celiotomies for traumatic and pathologic states those extrusions have been much more numerous in the male than the female.

I am unable also to find the published experience of any author on the influence of pregnancy or parturition as determining factors in the evolution of this hernia.

A young, pregnant female came to me for advice last spring ('98) who had a large eventration following an appendicitis, and as she was nearing her time for delivery her family physician was apprehensive as to the effects of labor.

She has since been delivered safely, and I am informed that the mass underwent no further augmentation, but, on the contrary, has greatly reduced in volume.

In aggravated cases of this description, under ordinary circumstances, the indications for operative relief are clear enough; but to operate during any stage of pregnancy is not justified, especially as we know they never become strangulated; besides, the shock of interference with the lethal action of the anesthetic is quite certain later to imperil the mother's life by a premature expulsion of the fetus.

Traumatic hernia probably may be considerably reduced in number by proper prophylactic expedients. The extent of the incision is evidently of no special consequence as a causative factor, provided effective coaptation of the divided parts is secured. When drainage must be utilized, with resorption and thinning of the resulting scar,

yielding is quite inevitable. But no matter how long we may enforce recumbency, or how perfect the line of union may be, it should never be forgotten that the muscular resistance of the abdomen is permanently impaired; hence the patient should be directed to wear some description of circular, supporting girth throughout life.

Bland Sutton speaks of these herniæ as being "sometimes the cause of more trouble than the disease for which the operation was performed, and besides are a danger to life." This may seem rather strong language, though it undoubtedly is abundantly supported by facts. As an illustration, we might cite those instances in which a hernia is produced, though an incision made in the abdominal wall, in an effort made to cure another hernia, or a hernial condition; as when one penetrates through the abdominal walls to "anchor" a sinking uterus, and a hernia follows through the yielding scar, vastly more troublesome than the ante or retroflexed fundus uteri.

Dr. Bretteur, of New York, reported ten very troublesome, traumatic eventrations, succeeding Alexander's operation, and states it as his belief, that the sequelæ were much more painful than the condition for which operation was done.

All this should certainly not weigh when serious intra-abdominal conditions call for operative treatment, though it goes to support the position of the noted London surgeon.

VAGINAL HERNIA CONSECUTIVE TO HYSTERECTOMY.

From an equally distinguished authority comes a note of warning on those grave, herniated conditions so liable to follow vaginal hysterectomy.

Dr. H. J. Garrigues, in a recent able contribution on the subject of "Fashions in Gynecology," calls to our notice the tendency to vaginal eventration after hysterectomies by the vulvar route; a most deplorable state, for which we can promise little or no succor.

Cittadini, of Brussels, in a late brochure—*De l'occlusion intestinale Vraie Aiguë Consécutive à la hystérectomie-vaginale*—declares that "acute intestinal occlusion is a relatively frequent and redoubtable complication after vaginal hysterectomy; hence, why after this operation, when symptoms of obstruction occur, it is important not to confound it with ileus, which may result from infection.

When the intestine is caught in the contracting incision through the vaginal vault it may sustain so much damage as to render an enterostomy imperative."

This would show that besides displacement, stenotic obstruction and strangulation may occur in this type of concealed eventrations.

In young subjects of good muscle the mesentery may so lift up the intestine as to so obviate the tendency to this; but after vaginal hysterectomy in wasted, anemic, elderly women, the descent of the intestine, through the open or feebly united gap is very liable to occur. In any event, the delivery of the internal generative organs by this passage is very prone to be followed by herniated conditions, the displacement, torsion, or compression of the intestine in the resulting cicatrix as stated by Cittadini.

This is the most deplorable of all phases of hernia, because by no means within our reach can we entirely control it; the underlying firm support being sundered, the uterus is gone, and the tendency of gravitation and intraperitoneal pressure is to aggravate and complicate a condition which must remain.

To the woman who has her conjugal duties to fulfil this state is an abomination; as besides her desexualized state and the perverted moral nature following, now a physical impediment is in the way.

Since Pean's essay in 1890 gave such an impetus to this new mode for clearing away inflammatory or neoplastic elements in the pelvis, the number of hysterectomies performed

by the vaginal passage has been enormous.

HERNIA THROUGH THE PELVIC PASSAGES; HERNIAL CONDITIONS.

The therapy of varying degrees of visceral ectopia, involving the contents of the pelvis and presenting in the vaginal passage, constitutes the greater part of every gynecologist's practice, exclusive of inflammatory lesions.

The large cleft at the base of the trunk, stretching quite the whole length of the anteroposterior plane of the floor of the pelvis from the cone of the pubic of the coccyx, must inevitably favor visceral displacement in the human being who takes the vertical attitude. The integrity of this hiatus and the normal position of the pelvic organs depend quite entirely on muscular support.

This is subject first to the disorganizing influence of violence in labor, and second, the pathologic degenerative changes of atrophic or senile character witnessed in advancing age. When the organs of the pelvis gravitate into, or through the vagina, it is said that they are flexed, displaced, or prolapsed, or that there is procidentia; when the rectum, the bladder, the ovary, or the uterus alone or together may make a descent, they being crowded down by the sinking viscera from above.

The essential etiologic factors which enter into these conditions are quite identical with true hernia, contractile supporting structures have torn, wasted, or stretched, resistance has given away and their advent follows.

Unlike in true hernia, however, the displaced viscera here are rarely strangulated, although they occasion much disturbance of function and are a source of great distress when present in an exaggerated degree; with hernia their therapy of late years has undergone many radical changes.

Twenty-five years ago they were all trussed up by pesaries and other mechanic devices, but of late they have been attacked from within the cavity of the peritoneum in the vulva and

vagina by plastic surgery mainly.

In certain individuals with lax or wasted muscle-fibre, here, as with hernia elsewhere, radical surgery can promise but little in permanent results. It would probably be no exaggeration to say that one in every ten women who have borne children suffers from this type of visceral ectopia.

THE GROWTH OF THE SOUTH.

The majestic current of prosperity and progress which is sweeping over the South is broadening with every swing of time's pendulum. Every ship that leaves her ports for foreign shores is heavier laden, every mile of railroad trackage is bearing the burden of greater trains. Her broad acres are intelligently tilled, and her harvests tell of abundant riches. The hum of her spindles has supplanted the old time plantation melodies. Her towns are fast becoming cities. Her thousands invested in industrial enterprises are rapidly changing into millions. The mountains and valleys are lifting up their voices in the grand anthem of prosperity.

From the turbid Mississippi to the Atlantic, and from the Ohio to the Gulf, an industrial evolution, more mighty in its significance, more powerful in its influence than any the world has ever known, is being wrought. The pulse beatings of this awakening are felt in every artery of trade and commerce in this and foreign lands. Sections in the North where generations have succeeded each other in controlling the markets in cotton goods confess their inability to meet the more practical conditions of manufacturing in the South. Her people are in earnest, and have set their faces toward the goal of prosperity with a determination kindled by hope and augmented by success already attained.—From "The Empire of the South," 184 pp. quarto size, 500 illustrations, sent for 15 cents to cover postage by

CH. HOPKINS, Division Passenger Agent,
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SPERMATORRHEA.

Dr. W. F. Waugh (*Merck's Archives*, October, '99) states that in hypochondria with spermatorrhea or prostaticorrhea there is nearly always a patch of hyperesthetic mucous membrane in the prostatic urethra. The ordinary treatment by cold sounds and silver nitrate is unsatisfactory, and these cases are the pests of the doctor's office. However, the irritability is quite amenable to injections of euphen-petrolatum (one drachm of euphen being mixed with one ounce of petrolatum), and the affected tissues are restored to a normal condition promptly and certainly. This done, the mental condition is improved, and the subsequent treatment is not specially difficult. The neurasthenia requires treatment, and the patient's mind must be led away from his malady, and this can be done when the urethral affection has been cured.

THERAPEUTICS

In charge of H. B. SHEFFIELD, M. D., New York.

HEADACHE—TREATMENT OF

In the pathology of headache we have to consider the general and local conditions. The first render the patient liable to pain, the second determine where that pain shall be. The general conditions which lead to headache are either imperfect or disordered nutrition. We find headache common in anaemia and still more so in disordered nutrition, as in rheumatism, gout, and in albuminuria. The nature of the alteration in nutrition is hard to determine, but Brunton calls attention to the importance of the liver in this connection. This stands in the gate of the organism, and prevents the deleterious substances from the intestines from passing into the general circulation. When these accumulate in their round from the intestines to the liver, until the organ is overtaken, they manage to get into the circulation and in this way he accounts for much of the toxin headache, and the relief obtained by cholagogues and aperients is evidence of this fact.

Why do toxins fasten upon the head and cause headache instead of pain elsewhere? Brunton credits this to local lesions, the most common of which are decayed teeth or something wrong with the eyes and nose. The headaches from vasomotor spasms or brain tumors are also noticed. The treatment of headache, according to Brunton, is to try to supply the brain with healthy blood and clear away any toxins, and one method is to give a blue pill and a black draught, or its equivalent, but we may further give something to counteract the toxins; he knows of nothing better than salicylic acid or soda. Analgerics are useful when the pain is not too severe, and morphine as a last resort, but this should be avoided for fear of induc-

ing the habit. In gouty, rheumatic and syphilitic headaches from inflammation of the periosteum, iodide of potassium is very useful. In conclusion Dr. Brunton cautions that in cases of intense headache unrelieved by drugs always looked out for glaucoma.

H. B. S.

—*Jour. Am. Med. Ass.*, vol. xxxiii, Nov. 22, '99.

RATIONAL TREATMENT OF SYPHILIS.

Dr. Ward lays down the following rules for the rational treatment of syphilis:

Mercury should be used alone in primary and secondary syphilis, unless severe lesions are present. Treatment should be begun at the earliest possible moment. The drug should be given in a form easy to take and not irritating to the stomach, such as gray powder, six grains a day being the average dose. It should be pushed to the toleration point, indicated by slight touching of the healthy gums. When the toleration point is reached, the mercury should be kept up to that point throughout the course, never higher, lest the patient be poisoned; never lower, lest sporing instead of destruction of the microbes occur. The course should continue for two years, that being the period of natural cure or real latency.

Iodides should not be used as routine treatment in the primary and secondary stages, because by removing the toxins, the phagocyte will no longer be attracted to the microbes and encapsulation and destruction will be hindered. Iodides together with mercury are to be used in increasing doses in the gummatous stage, later a mild mercurial course is advisable. In intractable cases with chronic blood-

poisoning and severe lesions a large quantity of water taken daily facilitates the excretion of the toxin.

H. B. S.

—Brit. Med. Jour., Oct. 21, '99.

COCAINIZATION OF THE SPINAL CORD.

Dr. Bier reports the results of certain experiments undertaken to determine the practical utility of rendering large areas of the body anæsthetic by injecting into the subdural space of the spinal cord, after the method of Quincke minute quantities of cocain. After the injection of 1-12 to 1-6 of a grain of cocain he was enabled to perform certain major operations painlessly, such as resection of the ischium and resection of the knee and ankle joints. In several instances, however, untoward symptoms followed, such as headache, nausea, and vomiting, which persisted for several days. To estimate the gravity of these symptoms, Bier injected into himself and into Hildebrand 1-12 of a grain of cocaine. Anæsthesia developed in about 5 to 10 minutes and lasted for nearly 3-4 of an hour, when sensation slowly returned. The after-effects were severe in both instances, Bier being confined to bed for several days.

H. B. S.

—Phila. Med. Jour., Nov. 11, '99.

THERAPEUTIC HINTS.

A twenty per cent. solution of menthol in olive oil is praised as a specific in hyperemesis of pregnancy.

A mild solution of acetate of zinc is said to cure every case of chilblains.

In tubercular "sore throat" try medium doses of fluid extract of ergot internally.

H. B. S.

WHOLESALE INOCULATION.

In the course of his opening address Dr. R. C. Keith (who has been appointed to fill the newly-created chair of pathology and bacteriology at Mason University College, Birmingham) said "pathologists were pretty generally agreed that practically all disease was bacterial in origin. Therefore, by the application of the principle that one attack of a disease from which an individual recovers protects him from a second attack of the same disease, artificial inoculation of any disease is efficacious. The success of Pasteur, following out the principle involved in Jennerian vaccination, suggests the possibility of the existence of the general law that immunity from all diseases may be established for man by treating him with their specific viri, so modified as to be in themselves harmless. Headaches, or being 'out of sorts,' may if we knew all, be traceable to a distinct bacterial invasion."

So come all ailing ones and be inoculated,

For the gay microbe's activity is slightly underrated;

He's here and there and everywhere, and deadly you will find him,

Unless you squirt some virus in his wicked eyes and blind him.

All ye who dine out late at night or go upon a "bender,"

And wake up with a swollen head and tongue that's slightly tender,

Must not imagine that the blame is due to drinks that fill us

With very mixed sensations, for its merely a bacillus.

And when you're feeling out of sorts, and things are dull and dumpy,

And your liver and your language are both ragged-edged and bumpy,

Just drop round to your medico, and stay undue infection

With a hypodermic needle and an Anti-Hump injection.

—Australasian Gazette.



MICROSCOPY

THE PARAFFIN METHOD IN HOT WEATHER.

It is frequently desirable, or even necessary, to prepare sections for examination during the heat of the summer months. Those who have tried to handle thin paraffin ribbons under such conditions of weather will appreciate the difficulties of the process. During such heated periods, I have been obliged at times to prepare slides, and driven to desperation by the unmanageableness of the thin paraffin ribbons, I have tried various plans to obviate the difficulties seemingly inherent in the methods. I was finally successful enough to obtain good results, and, in the hope of helping some one else, I will here give the simple means by which I operated. Most probably what I have to say will be anything but new to many, but possibly the methods may come as suggestions of value to some, and with that hope I will record them.

The great difficulty, of course, arises from the approach of the room temperature to that of the melting point of the paraffin, whereby the imbedding medium is rendered so soft as to be unable to withstand the impact against the knife, or to permit the handling of the ribbons without adhering to the instruments. Obviously, the only way to succeed in the treatment of such a substance is to render it cooler than the room; for it is not ordinarily convenient to lower the temperature of a room sufficiently, although this would be the more effective escape from the difficulties.

The means that render it possible to obtain good sections, even in the torrid heat of summer, are haste and ice judiciously administered. First I place the trimmed blocks of paraffin and their holders in a vessel containing

cracked ice, and the knife upon a cake of ice, until all become thoroughly cooled. I then take a good sized crystallizing dish and fill it with small pieces of ice and place over it a pane of glass. With everything thus in readiness, I place the holders in the microtome, adjust the knife, and, as quickly as possible, cut the ribbons. These, as they come from the block, are laid along the knife until of sufficient length, when they are removed and spread upon the pane of glass over the ice.

No difficulty will be found in keeping the block and the knife cool in the more recent form of the Minot microtome, made in this country, where the knife rests in a horizontal position, for it is easy to run the block up to the knife and to lay a piece of ice upon the two. But in the older Minot with the knife set vertically, it is more difficult to keep the cutting instrument and the object to be cut in the proper condition of temperature. This, because the preliminary cooling will not be found sufficient in cases where the block is of some size, and several subsequent applications of the refrigerating agent therefore become necessary. However, by exercising a little patience, I have succeeded with both machines, and I am sure any one else can.

With the ribbons cut and spread on the cool glass, it will not be found difficult to divide them into appropriate lengths for mounting, whereas, if they were lying upon some substance at the temperature of the room, they would be found to stick in a most uncomfortable manner, not only to the support but to the cutting instruments. I found it most convenient to have the knife with which the ribbons were cut into segments and the needles with

which they were handled, as cool as possible, and for this purpose I kept them, when not in use, thrust down past the edge of the glass into the ice below.

If all the conditions are favorable, the sections should come from the knife with but few wrinkles, but in order to secure them absolutely free from any folds, I am accustomed to spread them by heat. To do this, I place the segments of ribbon upon a perfectly clean slip covered with a thin solution of albumen (three drops of Mayer's albumen to an ounce of distilled water). The whole is then placed upon the top of the paraffin oven where the temperature is below the melting point of the paraffin. Here, in a very short time, they extend their full length quite free from folds or wrinkles.

While thus warm, it would be quite impossible to arrange them on the slip, so the mount is again transferred

to the cool pane of glass, and in this position, by the aid of some slips of absorbent paper, the sections of ribbon are established in position and the excess of fluid removed. Sometimes it is more convenient to manipulate the slides upon a Syracuse watch-glass, in the cavity of which are contained fragments of the ice. Should the little ribbons manifest a stubborn tendency to assume the form of circles or segments of the same, a few cuts on the concave side, extending not quite across, will render it possible to straighten them out satisfactorily.

Nothing now remains but to place the preparations upon the top of the paraffin oven and leave them for a couple of hours in order to secure the adherence of the sections to the slip, when they are ready for the further processes of staining and mounting in the usual manner.

—C. E. McClung, in *Jour. of Ap. Micro.*



GYNECOLOGY

GYNECOLOGICAL HINTS.

Erosions of the os uteri or granular os are a quite common condition and usually yield rapidly to appropriate treatment. After cleansing the vagina and cervix a strong solution of sulphate of copper, nitrate of silver or some caustic acid should be applied, and after the surface has been again cleansed a Micajah's Medicated Uterine Wafer is to be inserted in order to keep the parts in an antiseptic condition and to promote healing. Curetting is sometimes necessary.

Do not rely upon tampons as a means of prolonged application of medicaments to the vaginal and cervical mucous membranes. They are too often a delusion and a snare, acting as a foreign body and producing irritation, besides they are unclean and inconvenient of application. On the other hand a preparation like Micajah's Medicated Uterine Wafers accomplishes all that a tampon can do and is free from its disadvantages. Owing to its gradual solution the antiseptic and astringent elements of which it is composed are kept constantly in contact with the diseased mucous membrane, and thus a more permanent effect induced. Moreover, the wafers can be readily applied and intrusted to the patient.

The addition of antiseptic and astringent drugs to the vaginal douches is of questionable advantage. The main object of the irrigation is to cleanse the mucous membrane, and this can be much better attained by rendering the fluid slightly alkaline. After the irrigation the desired astringent and antiseptic effect can be efficiently secured by the insertion of a Micajah's Medicated Uterine Wafer.

Most cases of uterine displacements are too slight to demand operative

measures, yet sufficiently troublesome and annoying to call for local treatment. The most logical remedy here is one that will relieve congestion and engorgement, and increase the tone of the relaxed tissues. Micajah's Medicated Uterine Wafers are well adapted for this purpose by reason of their astringent, alterative and tonic properties.

No greater error can be committed in gynecological practice than to underestimate the importance of a vaginitis. These cases are usually of gonorrheal origin and if not vigorously treated the infection is very liable to spread upward. To prevent this extension the vagina should be flushed out several times daily with copious amounts of hot water, and this followed by an astringent and antiseptic application, such as Micajah's Medicated Uterine Wafers, which on account of their gradual solution exert a prolonged effect upon the diseased mucous membrane.

ACCIDENTAL WOUNDS OF THE FEMALE BLADDER.

BY FREDERICK HOLME WIGGIN, M. D., NEW YORK CITY.

Presented to the Section on Obstetrics and Diseases of Women, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

(Abstract from *The Journal of the American Medical Association*, of September 9, 1899.)

Accidental opening of the bladder has, for many years, been considered one of the most serious accidents that could occur in the course of the complicated work which gynecic surgeons are often called on to perform. The

following case is offered in illustration of this type of injury :

M. H., unmarried, æt. 41, was admitted to the City Hospital, Blackwell's Island, N. Y., September 30, 1898, suffering from a large myoma, which sprung from the anterior uterine wall and extended above the umbilicus. On October 3d the abdomen was opened, and the tumor, which weighed seventeen pounds, was drawn through an incision six inches in length, freed from its attachments and removed, together with the body of the uterus amputated near the internal os. As hemorrhage was profuse it became necessary to remove the mass very rapidly, to accomplish which the anterior attachment of the tumor was clamped and cut, when it was discovered, from the escape of urine, that the bladder had been opened near the fundus.

The general cavity had previously been shut off with gauze pads and thoroughly irrigated, followed by the use of Hydrozone in half strength, and this, in turn, by saline solution. The gauze pads were now changed, and the opening in the bladder, four inches in length, was closed by means of two layers of chromicized catgut sutures. The wound was then disinfected, and there being a large peritoneal flap, it was attached to the bladder and made to cover the line of sutures thus making the bladder-wound extra peritoneal. After further washing out of the abdominal cavity with Hydrozone and the saline solution the external wound was closed, without

drainage, and the usual dressings applied. The patient being feeble it was not thought advisable to make a vesico vaginal fistula to drain the bladder, but instead, a self-retaining catheter was introduced. At the end of ten days, however, tumefaction occurred over the lower angle of the abdominal wound, and on opening it, urine began to escape. A vesico vaginal fistula was now made in order to afford adequate drainage. The sinus in the abdominal wall was curetted and, after being thoroughly disinfected with Hydrozone, its walls were sutured. Soon afterward the sinus having closed, the sutures which kept open the vesico vaginal fistula were removed, and the latter closed quickly without any further operative interference.

Percival (in *British Medical Journal*, 1897, Vol. 1, p. 1282) reports a case of ruptured bladder on which he had operated. It was closed by means of a double wall of Lembert silk sutures. The wound in the abdominal wall was closed, after the peritoneal cavity had been flushed out with boric acid solution and a large quantity of clots and urinous fluids had been removed. For a few days the patient did well and then died from peritonitis. But the necropsy proved that the bladder wound had completely healed. It is the writer's opinion that had saline solution and Hydrozone been used, instead of boric acid, and the abdominal wound been closed leaving saline solution in the peritoneal cavity, the patient would probably recovered.



Clinical Medicine

In Charge of Dr. J. J. MORRISSEY.

THE LABORATORY OF THE LUNGS.

That Codeine had an especial effect in cases of nervous coughs, and that it was capable of controlling excessive coughing in various lung and throat affections, was noted before its true physiological action was understood. Later it was clear that its power as a nervous calmative was due, as Bartholow says, to its special action on the pneumo-gastric nerve. Codeine stands apart from the rest of its group, in that it does not arrest secretion in the respiratory and intestinal tract.

The coal-tar products were found to have great power as analgesics and antipyretics long before experiments in the therapeutical laboratory had been conducted to show their exact action. As a result of this laboratory work we know now that some products of the coal-tar series are safe, while others are very dangerous. Antikamnia has stood the test both in the laboratory and in actual practice; and is now generally accepted as the safest and surest of the coal-tar products. Five grain "Antikamnia and Codeine Tablets" each containing 4 3-4 grains Antikamnia, 1-4 grain Sulph. Codeine, afford a very desirable mode of exhibiting these two valuable drugs. The proportions are those most frequently indicated in the various neuroses of the throat, as well as the coughs incident to lung affections.

ICHTHYOL IN WHOOPING-COUGH.

Dr. J. Francis Sonter (Australasian Medical Gazette, September 20th) records the satisfactory results obtained by him with pills of ichthyol, in whooping-cough. He put four of his own children, varying in age from 2 years and 6 months to 8 years, on one grain (increased in a few days to two, then to three and four grains) every

four hours. Marked improvement ensued from the first, and Dr. Sonter tried the remedy with equally favorable results in ten other cases. He saw no unpleasant effects.

—New York Med. Jour., Oct. 28, 1899

THREADWORMS.

In the treatment of threadworms large injections must be used, and in view of the difficulty of dislodging the worms from the appendix, and their possible presence in the small intestine, the injection should be combined with the administration of drugs by the mouth. The vermiform appendix is a common habit of oxyuris vermicularis in children.

—Still, Med. Record.

ABSCCESS OF LIVER IN A CHILD OF TWO YEARS.

Moncorvo, Rio de Janeiro, reports the case, affirming the disease to be one of great rarity, inasmuch as not a hundred cases can be found in the literature.

The patient's mother was delicate, the father tubercular and syphilitic. Three former children had died, probably from hereditary syphilis. This child had had only measles and slight malaria.

Two months previously, child fell and struck his hypochondrium on a curb-stone. He cried for a while, but afterwards returned to his play. Next day pain re-appeared, fever set in and continued until admission to hospital. The incision was followed by recovery.

After eliminating the hypothesis of a hydatid cyst, of invasion of the ductus choledochus by lumbricoids, of umbilical phlebitis, appendicitis and typhoid, the author concludes the cause to have been traumatism.

—Revue Medicale, Sep. 19, 1899.

REPORT OF CASES OF SUDDEN DEATH FROM PULMONARY EMBOLISM FOLLOWING INJURIES OR OPERATIONS IN THE PELVIC REGION.*

BY GEORGE P. BIGGS, M.D.

Sudden death from pulmonary embolism is often so entirely unexpected, owing to absence of premonitory signs or symptoms, that it is important to know the conditions which may precede such a complication. I present to you very briefly a report of five cases, selected from the records of the last three hundred and fifty autopsies at the New York Hospital, in all of which embolism was secondary to injury or operation in the pelvic region:

Case I. Intracapsular Fracture of Femur; Thrombosis of Iliac Veins; Pulmonary Embolism.—J. P., aged eighty-two years, United States. History of a fall, striking on his left hip, causing intracapsular fracture of the femur. A splint was applied and the patient kept in bed. He was apparently doing well when, on the sixth day, he walked to the lavatory, and was there seized with severe dyspnoea. With help he returned to his bed and there died of respiratory failure in about five minutes.

Autopsy.—The fractured femur showed but slight evidence of repair. The pulmonary artery going to the right lower lobe was completely filled with dark-red ante-mortem coagula, which were not adherent to the vessel wall. Similar loosely adherent thrombi nearly filled the left common and internal iliac and the right internal iliac veins. On the left side the thrombus had a rounded end, but on the right side it was ragged, as if portions had broken away.

Case II. Dislocation of the Hip; Fractures of Ribs and Pelvis; Thrombosis of Iliac Veins; Pulmonary Embolism.—J. G., aged thirty-six years, United States, clerk. Patient was struck on the back by a falling barrel,

which caused fracture of several ribs on the right side and dislocation of the left hip. His condition was serious at first, but after five weeks of gradual improvement there was every reason to expect recovery. Improvement steadily continued for another week, when he had a violent chill, followed by cold perspiration, cold extremities, cyanosis, irregular heart action, and death within a few minutes.

Autopsy showed that the immediate cause of death was occlusion of the left branch of the pulmonary artery and its main branches by red and mixed thrombi which were originally molded in veins about the size of the iliacs. Similar thrombi were found in the left internal iliac vein and its branches, but the other pelvic veins were free from thrombi. Partially repaired fractures of the left acetabulum, spine of the left ischium, and the second, third, fourth, fifth, and sixth ribs of the right side were found.

Case III. Operation for Inguinal Hernia and Hydrocele Thrombosis of the Femoral and Iliac Veins; Pulmonary Embolism.—A. F. J., aged sixty years, Ireland, porter. History of hydrocele and irreducible hernia. The sac of each was dissected out and removed. Patient was doing very well, when, on the fifth day after operation, he suddenly died after an attack of violent dyspnoea.

Autopsy.—The wound was in good condition. Both branches of the pulmonary artery were packed full of non-adherent thrombi, chiefly of the red variety, but in parts mixed. When straightened out the thrombus in the left pulmonary artery was thirty-five centimetres in length and three-fourths to a centimetre in diameter. Judging from its size, it must have formed in a femoral vein. It was folded upon itself several times as a result of blood pressure from behind. The thrombus in the right pulmonary artery was folded once upon itself, and its larger size would indicate formation in the inferior vena cava or a common iliac vein. It measured twenty centimetres in length and half

*Read before the Society of Alumni of Bellevue Hospital, June 7, 1899.

a centimetre in thickness. Lying free in the inferior vena cava and common iliac vein was a third thrombus, twenty-two centimetres long and a half to three-quarters of a centimetre in diameter, probably formed in the femoral vein.

Case IV. Appendicitis with Pulforation; Embolism of the Pulmonary Artery.—R. O., aged 18 years, United States, clerk. History of acute appendicitis for two days. At operation a pocket of pus was found about the perforated appendix. Convalescence was prompt, and on the seventh day temperature, pulse, and respiration were perfectly normal. Death occurred suddenly on the eighth day.

Autopsy showed both branches of the pulmonary artery filled with red ante-mortem thrombi, which were originally formed in vessels of smaller size, probably the iliac veins. No additional thrombi could be found anywhere in the body.

Case V. Suprapubic Cystotomy for Vesical Calculus; Pulmonary Embolism.—G. W., aged 63 years, United States, barber. The patient did particularly well after the operation, and had been told that he could go home the following week. On the tenth day after the operation he suddenly developed marked dyspnoea and severe præcordial pain and distress. Death resulted in about twenty minutes.

At autopsy the pulmonary artery and its main branches were found to be packed full of soft, red, ante-mortem coagula, which were not adherent to the vessel walls. A similar coagulum five centimetres long was found free in the inferior vena cava. The diameter of all these coagula suggested their probable formation in the iliac veins, but no thrombi could be found in these vessels.

These cases are reported chiefly with a view to calling attention to the importance of considering this not infrequent fatal complication when giving prognoses. In not one of these five cases were there any symptoms to suggest thrombosis of the pelvic veins. The conditions preceding the develop-

ment of pulmonary embolism were such as to warrant a favorable prognosis in each case. It is this absence of symptoms of thrombosis, and the convalescent state of the patient usually existing prior to loosening of the thrombi, which often leads the physician into the embarrassing position of having his patient suddenly die soon after he has made a most favorable prognosis.

The most constant symptoms recorded in these cases were dyspnoea and præcordial pain and distress. In one case the first symptom was a violent chill, which was followed by cold perspiration, cold extremities, cyanosis, and irregular heart action. Death usually occurred so soon after the arrival of the physician that no detailed statement of symptoms could be made.

So important is it to make careful search in order not to overlook such emboli that I have been led to adopt a routine plan of carefully removing and examining the blood which flows into the pericardial sac after removal of the heart, and then examining the pulmonary artery. The reason for this is that large emboli are apt to fall out of the pulmonary artery when it is cut across, or later, when the lungs are raised for removal, and in this way they may be overlooked. I would strongly urge this method of examination in all cases of sudden death, particularly if preceded by dyspnoea.

The following brief conclusions are drawn from a study of a number of cases, of which those reported are good examples:

I. The emboli are usually in the shape of cylinders, a little smaller than the lumen of the vein in which they form. Such cylinders often become folded several times upon themselves as they are forced into the branches of the pulmonary artery.

II. The thrombi formed in veins are chiefly of the red variety, though occasionally they are mixed. They may be quite firm and slightly stratified, though at times, to the untrained eye,

they differ but little from post-mortem coagula.

III. Once started, thrombi in the veins tend to grow rather rapidly in the direction of the blood current.

IV. At the best, the thrombi are but loosely attached to the wall of the vein, and may separate completely, leaving no distinct mark to indicate the area of attachment, as was the condition in two of the cases reported.

V. A long, cylindrical thrombus may have but a very small base of attachment to one side of a vein, while the remainder of the thrombus floats free in the blood. This explains the absence of symptoms of venous obstruction.

VI. While infection may sometimes play an important part in the causation of these thrombi, such does not usually appear to be the case. It seems probable that simple extension of thrombi formed in smaller veins, which were damaged at the time of operation or injury, or by subsequent inflammation, will explain the occurrence in the large neighboring veins. Slowness of venous circulation naturally favors the process.

—New York Med. Jour.

THE REMOVAL OF WAX FROM THE EAR.

The Indian Lancet for June 16th, quoting the Union Medicale du Canada for January, states that Albert Ricci, of Turin, has ascertained that the solution of hydrogen dioxide possesses the peculiar quality of rapidly disintegrating the obstructive masses of cerumen in the ear. It suffices to pour into the meatus auditorius externus a small quantity of the solution, and leave it for a few moment in contact with the ceruminous plug. The latter is then most easily and safely removed by syringing with water, even though it were a hard concretion.

ETHYL BROMIDE NARCOSIS.

The increasing use of ethyl bromide renders any information regarding it of particular value. Dr. Schmeden, of

Oldenburg, writes that he has employed chemically pure ethyl bromide for a number of years in minor operation on the throat, nose and ear. Children may be held by a nurse, but adults are seated on a chair provided with a head rest. The writer employs the usual chloroform mask (Schimmelbusch), which he covers with several layers of mull, over which is fastened a layer of parchment paper. The entire quantity of ethyl bromide is poured into the mask at once, and the latter at once placed tightly over the nose and mouth. Fifteen gm. are sufficient for children, about 20 gm. for adults. Fresh mull and parchment paper are used for each narcosis, and so is a fresh bottle of ethyl bromide. No unpleasant by-effects have ever been observed from a pure article. The ethyl bromide appears to be particularly useful for employment on children.

—Merck's Report, Vol. VIII, No. 4.

PHARMACY. PRESCRIPTION INCOMPATIBILITIES.

Under charge of W. J. Jackson, Ph. G., M.D., Professor of Pharmacy, College of Physicians and Surgeons of San Francisco.

Under this head has appeared in recent issues of Merck's Report a series of articles by Dr. W. J. Robinson, of New York. In these articles the writer has shown the many mistakes made by practitioners in their endeavors to combine certain drugs and chemicals with a view to increasing their efficacy. At the same time he explains and justifies the use of many supposedly incompatible combinations, because of their practical utility.

The following are a few examples taken from the large and interesting list:

No. 1.—

Iodoformi.....drms. ss

Ætheris sulphur.....oz. ss

Aq. hydrogenii peroxidi...oz. ij

S.: Shake well and apply externally.

This prescription is incompatible. The iodoform dissolves in the ether, and on mixing the solution with the

peroxide iodine is liberated, as can be ascertained by adding gelatinized starch, when a deep-blue color is developed. Of course, the red-colored ethereal solution is immiscible with the H_2O_2 solution.

No. 2.—

Iodoformi dr. j
Ol. olivæ oz. ij
Aqua H_2O_2 oz. ij
Pulv. acaciæ q. s.
M. et ft. emulsio.

This prescription is incompatible. The iodoform being dissolved in the oil, the peroxide reacts on it with the evolution of iodine. Impurities in a fixed oil will also sometimes cause the liberation of the iodine.

The following combination is an odd one, but not incompatible. Careful tests failed to discover any decomposition in the iodoform. This is again due to the insolubility of the iodoform in the menstruum:

No. 3.—

Iodoformi dr. j
Aq. hydrogenii perox. oz. j
S.: Shake well and apply with pledget of cotton.

No. 4.—

Iodoformi
Hydrarg. chlor. mite. .aa dr. ij
S.: For external use.

This prescription is said by some to be incompatible, it being claimed that iodine is liberated from the iodoform and converting the calomel into mercuric iodide. I take exception to this statement and affirm that this combination is quite compatible. Iodoform liberates iodine only when exposed to direct sunlight; and when such powders are prescribed, they are not generally set in the sun. I have prescribed this combination hundreds of times, without ever noticing mercuric iodide. As a rule the powder is used in in a few days.

No. 5.—

Hydrarg. chlor. mitis. dr. ij
Hydrogenii peroxidi. oz. ij
S.: Apply externally three times a day.

The statement is generally made that hydrogen peroxide oxidizes or

otherwise changes mercurous into mercuric salts. This may be true of soluble mercurous salts, such as mercurous nitrate (did not investigate that subject, as the only mercurous salt used in medicine is an insoluble one), but it must be accepted with great reservation as regards calomel. I shook calomel with hydrogen peroxide for many hours, and failed to detect any mercuric chloride. This assertion must therefore be based upon the following careless observation: When hydrogen peroxide is kept in contact with calomel and filtered, the filtrate will give quite an abundant precipitate with silver-nitrate solution; a precipitate soluble in ammonia water and reprecipitated by nitric acid. This shows the presence of a soluble chloride in the filtrate, beyond all doubt. On further investigation we discover that even before being shaken with calomel, the peroxide gives a white precipitate of silver chlorides. On testing the filtrate with KOH, H_2S , or copper, or any other delicate test for mercury, none is discoverable. It is possible that on very prolonged contact some bichloride may be formed; but then the decomposition may be due to other causes, such as light, etc.

No. 6.—

Hydrogenii peroxidi. oz. ij
Sol. hydrarg. bichloridi 1:1000
oz. iv

S.: Apply externally with cotton swab.

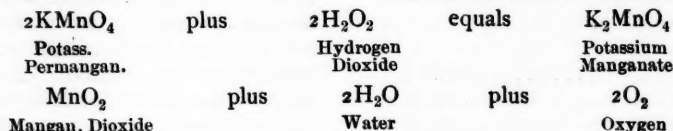
This prescription is all right. I have tested this solution both therapeutically, on patient, and chemically. The antiseptic effect was not in any way diminished, and chemical tests failed to discover any change either in the peroxide or in the corrosive sublimate.

No. 7.—

Hydrogenii dioxidi. oz. ij
Kali permanganici. gr. xxx
Aqua destill. oz. iv

Peroxide of hydrogen is an antiseptic, and so is potassium permanganate. In order to get a doubly strong effect, the unwary physician combines both in one mixture with the result of destroying both antiseptics. Hydrogen

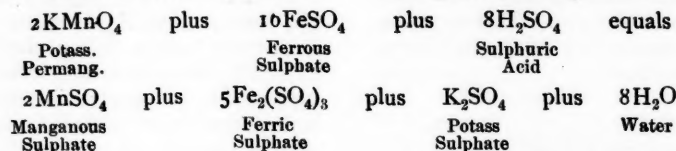
dioxide and potassium permanganate are absolutely incompatible. The solution of potassium permanganate is decolorized by the peroxide, with the



No. 8.—

Potass. permangdr. ss
 Ferri sulphatisdr. j
 Ac. sulph. dil.dr. ij

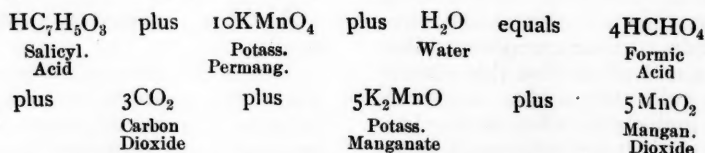
This combination minus the potassium permanganate is the favorite prescription of a very well-known gynecologist of New York City in many female ailments. The above was written by a young practi-



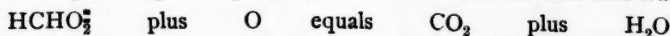
No. 9.—

Potass. permangdr. ss
 Ac. salicylicidr. j
 AquæOj

A black mixture is obtained at once. The potassium permanganate becomes reduced to potassium permanganate and manganese dioxide; while the



Of course it should be understood that all statements concerning reactions in which potassium permanganate is one of the factors are only relatively correct; because the reaction depends to a great extent upon the quantity of the permanganate present,



The patient who had ulcer of many years' standing said that he had derived more benefit from this mixture than from anything he had ever used. His ulcer was eventually healed. Was

formation of a precipitate of manganese dioxide and potassium manganate. The chemical reaction may be represented by the following equation:

Magnes. sulphat.....oz. ij
 Syr. zingiberis.....oz. ij
 Aquæ.....q. s. ad oz. viij
 S.: oz. ss t. i. d.

tioner, who thought he would improve it by adding the salt which is reputed to be so useful in amenorrhea. The permanganate is decomposed while the ferrous salt is converted, into the irritant and astringent ferric sulphate, thus:

S.: Dip a cloth into the solution and apply to ulcer, changing every half hour.

salicylic acid is decomposed into formic acid and carbon dioxide. The reaction may be expressed as follows:

the concentration of the solution, the temperature employed, etc. For instance, there can be no doubt that if sufficient permanganate be present, even the formic acid will undergo further oxidation until it is split up into carbon dioxide and water, thus:

it time for it to get healed, was it the formic acid, was it the balance of the undecomposed salicylic acid—who will say?

—Pacific Medical Journal.